

CLAIMS

1. Knee prosthesis comprising a metal base secured to an anchoring rod for fixing it into the tibia of a patient, and a plastic tibia plate which can slide freely over the said base, characterized in that the metal base (2) and the tibia plate (3) are equipped with guide means (22, 22', 22'', 26, 29, 5, 6, 5', 9, 50, 51, 52, 13, 15, 18; 34, 34', 34'', 35, 37, 7, 8, 10, 12, 53, 54, 55, 10', 17) defining a center of rotation (C, C') which may be offset from that of the tibia bone axis (YY'), so as to allow the tibia plate (3) to slide in rotation over the said base, the said guide means being positioned a certain distance away from the center of rotation (C, C').

2. Knee prosthesis according to Claim 1, characterized in that the guide means consist of at least one upstand (22, 22', 22'', 5, 6, 5', 9, 50, 51, 52, 13) in the shape of an arc of a circle secured to the metal base (2) and of a housing (34, 34', 34'', 7, 8, 10, 12, 53, 54, 55, 10') with the same radius of curvature made in the tibia plate (3) to allow the latter to slide in rotation about the center of rotation (C, C') of the said upstand.

3. Knee prosthesis according to Claim 2, characterized in that the guide means consist of an upstand (22, 5, 5', 51, 13) in the shape of an arc of a circle, which upstand is positioned in the anterior part of the metal base (2) and oriented in a substantially medio-lateral direction.

4. Knee prosthesis according to Claim 1, characterized in that the additional guide means

(26, 29, 6, 9, 15, 50, 52) are positioned on or near to the center of rotation (C, C') of the tibia plate (3) on the metal base (2).

5 5. Knee prosthesis according to Claim 4, characterized in that the additional guide means (26, 6, 9) are secured to a device (28, 60, 90) making it possible to prevent the tibia plate (3) from lifting from the metal base (2).

10 6. Knee prosthesis according to Claim 1, characterized in that the guide means consist of at least two pegs (18) set out in an arc of a circle and defining a center of rotation (C, C'), and of a housing (34) of the same radius of curvature formed in the tibia plate (3), the said pegs being positioned in the anterior part of the metal base (2) and oriented in a substantially medio-lateral direction.

15 7. Knee prosthesis according to Claim 2, characterized in that the metal base (2) comprises an upstand (22) in the shape of an arc of a circle having a central part (23) secured to lateral edges (24, 25) which are not as tall as the said central part, while the tibia plate (3) comprises, on its lower face (30), a housing (34) in the shape of an arc of a circle.

20 8. Knee prosthesis according to Claim 2, characterized in that the upstand (22, 22', 22'', 5, 6, 5', 9, 50, 51, 52, 13) has a center of rotation (C) which is borne by the tibia bone vertical axis (YY'), while the said upstand is a certain distance away from its center of rotation.

25 9. Knee prosthesis according to Claim 2, characterized in that the upstand (22, 22', 22'', 5, 6, 5', 9, 50, 51, 52, 13) has a center of

rotation (C') which is offset from the tibia bone vertical axis (YY'), while the said upstand is a certain distance away from its center of rotation.

5 10. Knee prosthesis according to Claim 2, characterized in that the metal base (2) has two upstands (22', 22'') in the shape of an arc of a circle, of constant height and having one and the same center of rotation (C, C'), while the tibia plate (3) comprises two housings (34', 34'') in the shape of an arc of a circle.

10 15. Knee prosthesis according to Claim 10, characterized in that the upstands (22', 22'') are set out opposite one another, and have one and the same center of rotation (C, C').

15 20. Knee prosthesis according to Claim 1, characterized in that the metal base (2) has, opposite the upstand (22), a retaining peg (26) borne by a center of rotation so as to engage with a cutout (35) formed in the tibia plate (3) to prevent the latter from lifting off the base (2) as the said plate slides in rotation about its center of rotation.

20 25. Knee prosthesis according to Claim 11, characterized in that the retaining peg (26) consists of a cylindrical pin (27) integral with a head (28) which has a larger diameter than the said pin so that the said head engages with inclined faces made in the cutout (35).

25 30. Knee prosthesis according to Claim 1, characterized in that the metal base (2) has, opposite the upstand (22), a centering peg (29) borne by the center of rotation (C, C') so as to engage with a blind hole (37) formed in the tibia plate (3) to guide the latter with respect to the

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base (2) as the said plate slides in rotation about its center of rotation.

15. Knee prosthesis according to Claim 1, characterized in that the metal base (2) and the tibia plate (3) respectively comprise a cutout (4 and 38) through which the posterior cruciate ligament can pass.

10 16. Knee prosthesis according to Claim 1, characterized in that the metal base (2) has two upstands (5 and 6) in the shape of an arc of a circle curved in the same direction and centered about the same center of rotation (C, C'), while the tibia plate (3) comprises housings (7 and 8) intended to receive the said upstands (5 and 6) respectively, so as to allow the said plate to slide in rotation about the center of rotation (C, C').

15 17. Knee prosthesis according to Claim 16, characterized in that the upstand (6) is integral with a flange (60) which engages in a slot (80) in the housing (8) to prevent the tibia plate (3) from lifting off the metal base (2) as the said plate slides in rotation about the center of rotation (C, C').

20 18. Knee prosthesis according to Claim 1, characterized in that the metal base (2) comprises two upstands (5 and 9) in the shape of an arc of a circle in opposite directions and centered about the same center of rotation (C, C'), while the tibia plate (3) comprises an element (10) and a housing (12) which are intended to receive the said upstands (5' and 9) respectively to allow the said plate to slide in rotation about the center of rotation (C, C').

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19. Knee prosthesis according to Claim 18, characterized in that the upstand (5') is set out on the external periphery of the horizontal disk (20) of the metal base (2) so as to engage with a peripheral recess (10) in the tibia plate (3).

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20. Knee prosthesis according to Claim 18, characterized in that the upstand (9) is offset from the center of rotation (C, C') and comprises a flange (90) which snap-fastens into the housing (12) in the tibia plate (3) to, on the one hand, guide the plate (3) as it slides in rotation about its center (C, C') and, on the other hand, retain the said plate so that it does not lift off the metal base (2).

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21. Knee prosthesis according to Claim 1, characterized in that the metal base (2) comprises a peripheral upstand (13) in the shape of an arc of a circle integral with a flange (14) directed toward the tibia bone vertical axis (YY') and a housing (15) set out in the region of the center of rotation (C, C'), while the tibia plate (3) has, on its external periphery, a recess (10') in which there is formed a horizontal slot (16) intended to receive the flange (14) of the said upstand (13) and, on its lower face (30), a stub (17) which engages with the housing (15).

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30 22. Knee prosthesis according to Claim 1, characterized in that the metal base (2) comprises three peripheral upstands (50, 51, 52) extending vertically above the horizontal disk (20), while the tibia plate (3) has, on its external periphery, three recesses (53, 54, 55) intended to receive the said upstands (50, 51, 52) respectively to allow the said plate to be guided as it slides in rotation about the center of rotation (C, C').

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23. Knee prosthesis according to Claim 6, characterized in that the pegs (18) are set out in an arc of a circle about a center of rotation (C, C'), while the tibia plate (3) has a housing (34) intended to receive the said pegs.

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24. Knee prosthesis according to Claim 6, characterized in that the pegs (18) have a center of rotation (C) which is borne by the tibia bone vertical axis (YY'), while the said peg is a certain distance away from its center of rotation.

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25. Knee prosthesis according to Claim 6, characterized in that the pegs (18) have a center of rotation (C') which is offset from the tibia bone vertical axis (YY'), while the said peg is a certain distance away from its center of rotation.

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26. Knee prosthesis according to Claim 1, characterized in that the metal base (2) comprises at least one upstand or peg (22, 22', 22'', 26, 29, 5, 6, 5', 9, 50, 51, 52, 13, 15, 18) which engages with a housing (34, 34', 34'', 35, 7, 8, 10, 12, 53, 54, 55, 10', 17) of the tibia plate (3) so that the said plate can slide in rotation over the metal base (2) only within the limit set by the difference in size between the said upstand or peg and the said corresponding housing.

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27. Knee prosthesis according to Claim 26, characterized in that the rotational travel between the tibia plate (3) and the metal base (2) is reduced to zero when the dimensions of the housing (34, 34', 34'', 7, 10, 10', 53, 54, 55) are made so as to engage without clearance with the upstand (22, 22', 22'', 5, 5', 13, 50, 51, 52, 18).

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28. Knee prosthesis according to Claim 1,
characterized in that the short height of the
guide means and of their anterior positioning on
the metal base (2) allows the tibia plate (3) to
be mounted on the said base via a strictly
anterior approach, the said plate requiring upward
clearances only by the height of the said guide
means.

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